REMARKS

Applicant wishes to thank the Examiner for the attention accorded to the instant application, and respectfully requests reconsideration of the application as amended.

Formal Matters

Claims 1-25 are currently pending in the Application. By this amendment, claims 1, 4, 8, 12, 15 and 19 are amended by adding the features and limitations of claims 3, 6, 11, 14, 17 and 22, respectively. Claim 18 is amended to correct dependency. Claims 3, 6, 11, 14, 17 and 22-25 are canceled without prejudice. Claims 12, 15 and 19 are also amended to recite that generating a sentence structure and generating a similar structure are performed using a computer. Support for this amendment can be found throughout the specification, for example on page 10.

Thus claims 1, 2, 4, 5, 7-10, 12, 13, 15, 16, 18-21 are pending in the application, with claims 1, 4, 8, 12, 15 and 19 being independent claims. Care has been taken to ensure no new matter is being entered.

Rejection of Claims Under 35 U.S.C. §101

Claims 12-22 are rejected under 35 U.S.C. § 101 because these claims allegedly do not fall within one of the four statutory categories of invention. Independent claims 12, 15 and 19 are amended to recite generating a sentence structure and generating a similar structure using a computer. Thus these independent claims, and their dependent claims, recite statutory subject matter of a method tied to a particular a machine (computer). Claim 22 is canceled, rendering its rejection moot.

Withdrawal of this rejection is respectfully requested.

Rejection of Claims Under 35 U.S.C. §103

Claims 1-25 are rejected under 35 U.S.C. § 103(a) as unpatentable over Akers et al., U.S. Patent No. 6,278,967 (hereinafter "Akers") in view of Kumai, U.S. Patent Application

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Publication No. 2004/0260979. These rejections should be withdrawn based on the comments and remarks herein.

As regards amended Claims 1 and 12, a text mining apparatus comprises means for generating a sentence structure from an input document, means for generating a similar structure of patterns having a similar meaning of a partial structure of the sentence structure by performing predetermined conversion operation, including at least change in connection of branches in a graph structure, of the partial structure, and means for determining the patterns having the similar meaning as the identical pattern and detecting the patterns. The means for generating the similar structure comprises means for performing parallel modification (see, Fig. 18) of sentence structure, means for generating a partial structure (see, Fig. 19) of the sentence structure, means for performing non-directional branching (Figs. 20A-20E) of a directional branch of the sentence structure and/or partial structure, means for replacing a synonym (see, Fig. 22) in the sentence structure and/or partial structure by referring to a synonym dictionary, and means for performing non-ordering (see, Fig. 22) of ordering trees of the sentence structure and/or partial structure. The means for generating the similar structure uses the similar structures as an equivalent class of the partial structure of the sentence structure.

Amended claims 4, 8, 15, and 19 also define a concrete similar-structure generating unit.

The Examiner asserts that Kumai discloses means for performing parallel modification. Applicant respectfully disagrees. Kumai teaches, in paragraph [0062] and Fig. 5, an example of a screen display of a resemblance sentence retrieving tool for retrieving a sentence which is resembled to a designated sentence. Kumai discloses extracting a designated sentence containing a featured word and documents having similar featured words provided in a top priority. However, Kumai neither discloses nor teaches a concrete method of parallel modification, that is, how to retrieve (prepare) the "resemblance sentence" from the "designated sentence." Hence,

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Kumai does not teach or suggest performing parallel modification of the sentence structure as recited in the independent claims of the present invention.

Akers does not overcome this deficiency and the Examiner does not state otherwise. Akers discloses, in col. 4, line 41 to col. 5, line 3, an automated natural language translation system which can translate from a source natural language to a target natural language. The translation engine includes a preparer, a parser, a graph maker, an evaluator, a graph scorer, a parse extractor, and a structural converter. The preparer examines the input text and resolves any ambiguities in input sentence boundaries. The preparer then creates and displays the input text in a parse chart to obtain possible syntactic categories for the input text. The graph maker produces a graph of the possible syntactic interpretations of the input text based on the parse chart. The graph includes nodes and subnodes that are associated with possible interpretations of the input text. The evaluator, which comprises a series of experts, evaluates the graph of the possible interpretations and adds expert weights to nodes and subnodes of the graph. The graph scorer uses the expert weights to score the subnodes, and the graph scorer then associates the N best scores with each node. The parse extractor assigns a parse tree structure to the preferred interpretation as determined by the graph scorer. The structural converter performs a structural conversion operation on the parse tree structure to obtain a translation in the target language.

Akers also discloses, in col. 8, lines 6-26, "the order in which nodes are visited and scored is a standard depth-first graph-walking algorithm."

Furthermore, Akers discloses, in col. 8, line 66 to col. 9, line 46, the structural converter which may comprise a grammar rule controlled structural converter 36, a lexicon controlled structural converter 38, and a synthesis rule controlled structural converter 40. The preparser 24 first performs a preparsing operation (step 102) on the source text 23. This operation includes the resolution of ambiguities in sentence boundaries in the source text, and results in a parse

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chart seeded with dictionary entries 25. The parser 26 then parses the chart produced by the preparser (step 104), to obtain a parse chart filled with syntactic possibilities 27. The graph marker 28 produces a graph of possible interpretations 29 (step 106), based on the parse chart resulting from the parsing step. The evaluator 30, which accesses a series of experts 43, evaluates the graph of stored interpretations (step 108), and adds expert weights to the graph 31. The graph scorer 33 scores nodes and associates the N (e.g., 20) best scores with each of them. The parse extractor 32 assigns a parse tree structure 39 to this preferred interpretation (step 110). The structural converter 34, which accesses the conversion tables 58, then performs a structural conversion operation (step 112) on the tree to obtain a translation 41 in the target language. However, Akers does not teach or suggest performing parallel modification of the sentence structure.

In addition, the Examiner concedes that Kumai fails to teach including at least change in connection of branches in a graph structure, of the partial structure and that Kumai fails to teach means for performing non-directional branching of a directional branch of the sentence structure and/or partial structure and means for performing non-ordering trees of the sentence structure and/or partial structure.

Akers discloses, in col. 11, lines 11-32 and Fig. 9, a sample graph used in the system of Fig. 1 for the exemplary phrase "by the bank". The graph includes nodes 80 and their subnodes 82, 84, 86 linked by pointers 88, 89, 90, 91 in a manner that indicates various types of relationships. In addition, Akers discloses substructure, specified in col. 16, lines 20-29. However, Akers does not teach or suggest performing non-directional branching of a directional branch of the sentence structure, as recited in the independent claims of the present invention.

It has been held by the courts that to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. See, *In re Royka,*

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490 F.2d 981, 180 USPQ 580 (CCPA 1974). As illustrated above, the hypothetical combination of Akers and Kumai does not disclose either performing parallel modification of the sentence structure or performing non-directional branching of a directional branch of the sentence structure, so that *prima facie* obviousness has not been established. Consequently, independent claims 1, 5, 8, 12, 15 and 19, along with their dependent claims, patentably distinguish over the art of record in the application. Claims 3, 6, 11, 14, 17 and 22-25 are canceled, rendering their rejections moot.

Hence, withdrawal of this rejection is respectfully requested.

Conclusion

For the reasons set out above, Applicant respectfully submits that the application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are respectfully requested. Should the Examiner believe that anything further is needed to place the application in even better condition for allowance, the Examiner is requested to contact the undersigned representative at the telephone number below.

Respectfully submitted,

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